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IX.—*Notes on Mantidæ in the Collection of the British Museum (Natural History), South Kensington, with Descriptions of new Species.* By W. F. KIRBY, F.L.S., F.E.S.

'THE undescribed species of Mantidæ in the National Collection are not very numerous ; but I here describe a series of interesting forms in advance of my ' Catalogue of Orthoptera.' It is proposed to include the Gressorial Orthoptera (Forficulidæ, Hemimeridæ, Blattidæ, Mantidæ, and Phasmidæ) in the first volume, leaving the Saltatorial groups (Gryllidæ, Phasgonuridæ, and Locustidæ) to be included in the second volume.

Mantidæ.

EREMIAPHILINÆ.

Genus THEOPOMPA, Stål.

Theopompa Westwoodi, sp. n.

Exp. al. 75–102 mm.

Female.—Head pink, mouth-parts paler ; eyes and ocelli very prominent ; a strong transverse ridge on the face just below the antennæ.

Prothorax dark reddish brown above, sides and under surface paler ; an angular projection on each side in front, though the prothorax attains its greatest width further back, at about one third of its length, after which it narrows

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gradually towards the extremity. Sides of mesothorax above and upper surface of metathorax and abdomen mostly black, or interalary spaces and base of abdomen pruinose blue; the under surface, the extreme tip of the abdomen, and the appendages pale.

Front legs bone-colour or pale flesh-colour, with most of the spines tipped with black; coxæ conspicuously pale and marked with two small black spots above; femora with the outer side longitudinally excavated and strongly granulated on the basal half, and edged below towards the tip with three strong spines; the inner surface edged with numerous spines; ridged in the middle and longitudinally excavated above; below the ridge a long black basal blotch runs nearly to the middle; beyond this the ridge is marked with an interrupted black line, and there is another rounded black blotch below it before the extremity. Middle and hind legs flesh-colour, spotted with darker.

Tegmina hyaline, with pink nervures on the costal and internal areas and on the disk; otherwise pink, varied with darker at the base, below the anterior radial, and along the other principal nervures; there are about six oblong spots on the basal third of the anterior radial, which is branched at its extremity; the upper branch of the posterior radial forms a short wide fork at the extremity, most distinct on the right side.

Wings brownish hyaline, darker towards the costa at the base, and the costal and apical areas varied with lighter and darker spaces; the branches of the anterior ulnar vein long.

The male is much smaller than the female and less pink, with the basal half of the wings brownish.

Hab. Ashanti; Tamsoo, Gold Coast.

Allied to *T. heterochroa*, Gerst., but larger, the wings lighter, more uniform in colour, and differently veined.

Genus HUMBERTIELLA, Sauss.

Humbertiella ocularis.

♀. *Humbertiella ocularis*, Sauss. Mém. Soc. Genève, xxiii. p. 16 (1872).

Exp. al. 46 mm.

Male.—Body and legs reddish above, testaceous beneath. Head and prothorax more or less varied with black above; legs spotted and streaked with black above, the black and testaceous markings forming long alternate streaks on the middle and hind tibiæ and tarsi.

Tegmina of a slightly yellowish hyaline; a row of oblong black spots along the mediastinal nervure, the rest (except

the costal and internal areas) marked all over with round brown spots along the nervures. Wings brownish hyaline, with obsolete brown spots towards the tips.

Hab. Borneo.

Resembles *H. indica*, Sauss., ♂, but in that species the spots are much smaller, linear, and do not extend to the wings, and the abdomen is much darker above. It must also much resemble the male of *H. ceylonica*, Sauss.

Humbertiella (?) *Brunneri*, sp. n.

Entella Brunneri, Fruhstorfer, MS.

♂.—Long. corp. 21, exp. al. 25 mm.

♀.—Long. corp. 25, exp. al. 28 mm.

Clay-colour, more or less mottled with light brown; head and pronotum without conspicuous elevations; pronotum with the shoulders rounded off, but otherwise with the outline nearly as in *H. indica*.

Tegmina reddish, with yellowish nervures, frequently expanded, especially in the female, into indistinct spots; the subcostal nervure with a black line more or less broken into long spots. A large somewhat ill-defined pale stigma, bordered before and behind with blackish; the anal area and nearly the half of the lower and outer border almost transparent. Wings dark orange towards the base in the male, more reddish towards the costa; a broad smoky-brown border, intersected by white transverse nervures; above the fold the border is narrower, darker, and slightly edged with hyaline at the extreme apex of the wing. The female differs in the basal part of the wing being bright yellow, with no reddish shade.

Hab. Lombok.

This curious species seems to me to be more nearly related to *Humbertiella* than to *Entella* or to *Hapalomantis*, to which Westwood refers a Bornean species (*H. semirufula*), the female of which (Rev. Mant. pl. i. fig. 1) appears to be nearly related to our *Humbertiella Brunneri*, except that the extremity of the pronotum is distinctly narrowed in the figure.

Genus PYRGOMANTIS, Gerst.

Pyrgomantis Jonesi, sp. n.

Long. corp. 45, exp. al. 55 mm.

Male.—Yellowish brown or light brown (perhaps green during life); tegmina and wings with the costal area yellowish; smoky brown towards the base, with the transverse

nervures mostly white below the middle ; outer part of wings and tegmina smoky hyaline.

Hab. South Nigeria (*Dr. S. A. Jones*).

Resembles *P. singularis*, Gerst. (which I cannot distinguish from *P. nasuta*, Thunb. & Sauss.), but easily recognizable by the coloured wings and by the protuberance on the head, which is broader and more obtuse.

CHÆRADODINÆ.

Genus CHÆRADODIS, Gerv.

Chæradodis squilla.

Chæradodis squilla, Sauss. Mitth. schweiz. ent. Ges. iii. p. 72 (1871) ;
Mém. Soc. Genève, xxi. p. 13, pl. iv. figs. 3, 3 a (1871).

Hab. Ceylon.

The insects figured by Westwood as *C. squilla* agree with *C. cancellata*, Fabr., as identified by Wood-Mason, and not with the former species.

MANTINÆ.

Genus HAPALOPEZA, Stål.

Hapalopeza maculata, sp. n.

Long. corp. cum tegm. 20 mm.

Yellowish green (probably green during life) ; face with two round black spots below the ocelli, and two larger ones on the vertex ; behind these, two, wider apart, being just within the eyes, and between these are two other small reddish spots, and low down on the occiput are two more black spots. Antennæ black, with the first and third joints pale. Pronotum greenish in the middle and reddish on the sides, with four large black spots, two on the widest part and two before these. Legs greenish, the knees, tips of spines, and tips of tibiæ and tarsi darker ; front femora with two small reddish or brownish marks on the basal half.

Tegmina subhyaline, strongly iridescent, with the subcostal nervure reddish ; the other nervures mostly brown.

Hab. Ceylon (*E. E. Green*).

Allied to *H. tigrina*, Westw., which is possibly not distinct from *H. nitens*, Sauss. Some specimens of *H. maculata* are more reddish and uniform in colour than that described, with the spots on the head much smaller and less distinct ; but the four large spots on the pronotum and the two small spots on the front femora seem to be always constant.

Genus CARVILIA, Stål.

Carvilia costalis, sp. n.

Mantis cincta, var. *a*, Gerst. Deeken's Reisen in Ost-Afrika, iii. (2) pp. 14, 15 (1873).

Long. corp. 52, exp. al. 50 mm.

Female.—Tawny brown; head with the base of the labrum black, and a black oval transverse depression, on the lower edge of which the two upper ocelli stand; head transverse, twice as broad as the front of the prothorax.

Prothorax half as long again as the meso- and metathorax taken together; suddenly expanded above the anterior coxæ, the frontal lobe carinated and granulated above, and the whole length of the prothorax set with rather small teeth on the sides.

Abdomen expanded, colour darker than the rest of the body.

Front legs testaceous; coxæ granulated and denticulated behind, and edged in front with a row of about 15 small teeth, of which 4 or 5 are larger than the others, and are black beneath, except at the tips. Coxæ marked with three blackish bands above, and below with a spot at the base, and a large dusky space before the extremity. Femora with 3 strong teeth on the upper edge and about 12 on the lower, the latter black beneath. Tibiæ with about 14 spines, those towards the extremity black at the tips, and the terminal spine wholly black; on the upper and outer surface the femora are marked with three blackish bands.

All the tarsi blackish; middle and hind legs otherwise dull reddish, with no distinct markings.

Tegmina blue-black, with traces of a pale transverse band across the centre; costal area yellowish, and the apex and hind margin tawny brown; hind wings blue-black, the margins paler, and the costa narrowly reddish.

Hab. Abyssinia.

Gerstaecker may be right in treating this insect as a variety of his *M. cincta*, but it is very different in appearance from the typical form of that species.

Genus SPHENDALE, Stål.

Sphendale xanthoptera.

Mantis xanthoptera, Oliv. Enc. Méth. vii. p. 637. n. 61 (1792).

Mantis ochroptera, Licht. Trans. Linn. Soc. Lond. vi. p. 29. n. 29 (1802).

Mantis nympha, Stoll, Spectres, Mantes, p. 19, pl. i. fig. 22 (1813).

The locality of Stoll's specimen is given as Negapatam.

A female from Nepal, fairly agreeing with his figure, was ticketed *Mantis obscura*, Fabr., by Bates; but the type of the latter species is a male, and came from "Equatorial Africa" (probably Sierra Leone).

Sphendale robusta, sp. n.

Thespis robusta, Bates, MS.

Long. corp. 63, prothor. 17, exp. al. 39 mm.

Female.—Brown, front legs slightly marbled with black; tegmina unicolorous, except the internal area, which is blue-black, except at the base; wings with the costal area yellowish, with a black spot in the middle; otherwise light violet-brown, with white cross-nervures.

Hab. Nepal.

Closely allied to *S. xanthoptera*, Oliv., but the front coxæ and the sides of the prothorax are much more finely denticulated, the prothorax is slightly and the abdomen considerably broader, and the tegmina and wings are much more uniform in colour.

Genus PHOTINA, Burm.

Photina gracilipes, n. n.

Cardioptera reticulata, Sauss. Mém. Mex., Mant. p. 196 (1871), nec Burm.

Hab. Para (?).

Saussure has enumerated two species under the name of *Cardioptera reticulata*, and Westwood has renamed Burmeister's species *Mantis Burmeisteri* (Rev. Mant. p. 15). But in such a case it is the second species, not the first, which requires another name.

Genus LEPTOCOLA, Gerst.

Leptocola gracillima.

Leptocola gracillima, Gerst. Mitth. Ver. Neu-Vorpommern, xiv. p. 92 (1883).

Euchomena Stanleyana, Westw. Rev. Mant. p. 33 (1889).

This curious species occurs in various parts of Western Africa, from the Cameroons to the Congo.

VATINÆ.

Genus HETEROCHÆTA, Westw.

(Arc. Ent. i. p. 161, pl. xli., 1845.)

Heterochæta orientalis, sp. n.

Long. corp. 115, long. pronot. 50, exp. al. 120 mm.

General colour reddish grey; head deeply concave in front, semicircular, the vertex forming a narrow transverse carina, at least in the female, and the eyes curving outwards and forwards, very large, and ending in a large conical spine. Pronotum narrowed in front and strongly granulated, carinated, laterally serrated before the enlargement above the coxæ, which is moderate, and bordered by a narrow rounded ridge. Hind part of prothorax with a middle carina and distinctly raised at the extremity. Front coxæ minutely serrated above and very strongly and irregularly dentated below, but more strongly in the female than in the male. Two teeth near the base and one before the extremity are the largest. Middle and hind femora with small dentated lobes at the extremity beneath.

Tegmina varied with reddish, and subhyaline grey, the reddish colour increasing and becoming more uniform towards the extremity; inner margin hyaline. Wings on the costal area almost hyaline, with transverse dark spots; apex yellow, preceded by a large steel-blue blotch. The rest of the wing is clear subhyaline yellow, divided by narrow undulating steel-blue bands in the male, which are broader and anastomose in the female.

Hab. Luitpoldhette, East Africa (♂); German East Africa (♀); British East Africa (immature ♂).

It is probably this species to which Gerstaecker alludes (Mitth. Ver. Neu-Vorpomm. xiv. p. 94, 1883) as a variety of the very distinct West-African *H. tenuipes*, Westw.

Genus PSEUDOCHEÆTA, nov.

Allied to *Heterochæta*, Westw.; eyes shorter, obtusely conical, and ending in a blunt point instead of a long spine; ocelli very prominent; middle and hind femora with rounded denticulated lateral lobes; cerci jointed and laminated.

Pseudochæta Strachani, sp. n.

Long. corp. 114, prothor. 36, cercorum 8, exp. al. 103 mm.

Female.—Body and legs shining fawn-colour, the latter indistinctly mottled with darker; prothorax with the dorsal carina well marked; laterally denticulated throughout and slightly expanded above the front coxæ; front coxæ slightly curved, attenuated beyond the middle, and slightly expanded again before the extremity; dorsal and lateral carinæ finely denticulated, the front lateral carina with about 6 moderately large teeth; front femora half as long again, attenuated and distinctly curved beyond the middle, with long pale spines tipped with black, and the lower carina denticulated to the base; front tibiæ slender, not more than half as long as the femora, with only 6 spines on the outer carina, including the terminal one, but with a great number of curving spines on the inner carina, gradually increasing in length, and terminating in an immense curving hook about two fifths as long as the tibiæ. First joint of the tarsi slender, curved, about half as long as the tibiæ and two fifths longer than the remaining joints of the tarsi. Middle femora and tibiæ rather short (especially the femora) and attenuated in the middle; all the carinæ very finely denticulated; femora with an inner and tibiæ with an outer terminal spine. Hind femora and tibiæ long, rather slender, of nearly equal length, and all the carinæ very finely denticulated; femora with an inner terminal spine, tibiæ with an inner and outer one.

Tegmina subhyaline, clouded with fawn-colour on the costal half; wings subhyaline, clouded with pink along the costa, below which are several rows of light brown and subhyaline blotches, and towards the centre the wing is ornamented with large irregular spots and bands of lighter yellow and steel-blue.

Abdominal laminæ slightly narrowed at the base, otherwise uniformly broad, and obtuse at the ends.

Hab. Lagos (*Dr. Strachan*).

This very interesting species has a strong superficial resemblance to *Heterochæta orientalis* from East Africa, described above.